

Whooping Crane Survey Results: Winter 2022–2023

536 Wild Whooping Cranes Estimated (95% CI = 443.5–644.1)

The U.S. Fish and Wildlife Service estimated the abundance of whooping cranes in the Aransas-Wood Buffalo population for the winter of 2022–2023. Survey results indicated 536 whooping cranes (95% CI = 443.5–644.1; CV = 0.146) inhabited the primary survey area (Figure 1). This estimate included at least 88 juveniles (95% CI = 67.1–124.0; CV = 0.199) and 203 adult pairs (95% CI = 170.0–242.6; CV = 0.144). Recruitment of juveniles into the winter flock was 19.9 chicks (95% CI = 14.4–27.4; CV = 0.163) per 100 adults.

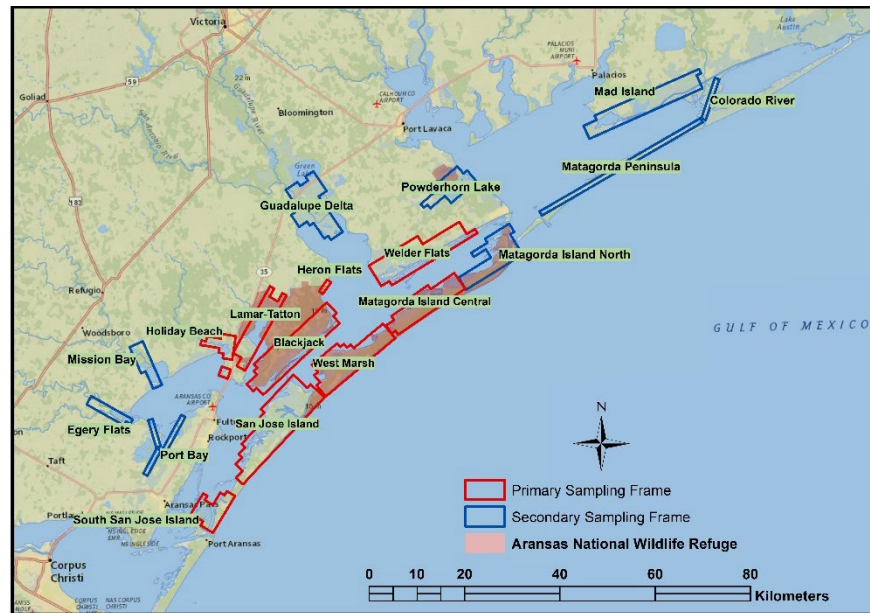


Figure 1. The sampling area used to monitor whooping crane abundance on their wintering grounds along the Texas coast of the Gulf of Mexico, USA.

During winter 2022–2023, the U.S. Fish and Wildlife Service conducted surveys in late-January using a Quest Kodiak aircraft. The primary survey areas (approximately 170,500 acres; Figure 1) were surveyed during January 23–28, 2023. The South San Jose Island, San Jose Island, Lamar-Tatton, Blackjack, and Heron Flats survey areas were surveyed 4 times, and the Welder Flats, Matagorda Island Central, Holiday Beach, and West Marsh survey areas were surveyed 3 times. The secondary survey areas (approximately 85,250 acres; Figure 1) were not surveyed this winter.

The long-term growth rate in the whooping crane population has averaged 4.34% ($n = 82$; 95% CI = 1.76–6.83%). The population has remained stable over the last two years (Table 1; Figure 2). The Canadian Wildlife Service reported 61 whooping crane chicks were fledged at Wood-Buffalo National Park in summer 2022. We estimated at least 88 juveniles (95% CI = 67.1–124.0) on the wintering grounds. Typically, juvenile plumage color is less distinct in late-January than earlier in the winter, but this year observers noted it was more distinguishable than usual.

During the survey period, some whooping cranes were observed outside of the primary survey areas. Table 2 provides our best understanding of whooping cranes outside the primary survey areas during

the survey period. We cannot ascertain if all or some of these birds moved in and out of the primary survey area during the survey period. Therefore, some unknown number of birds may be missed while others counted.

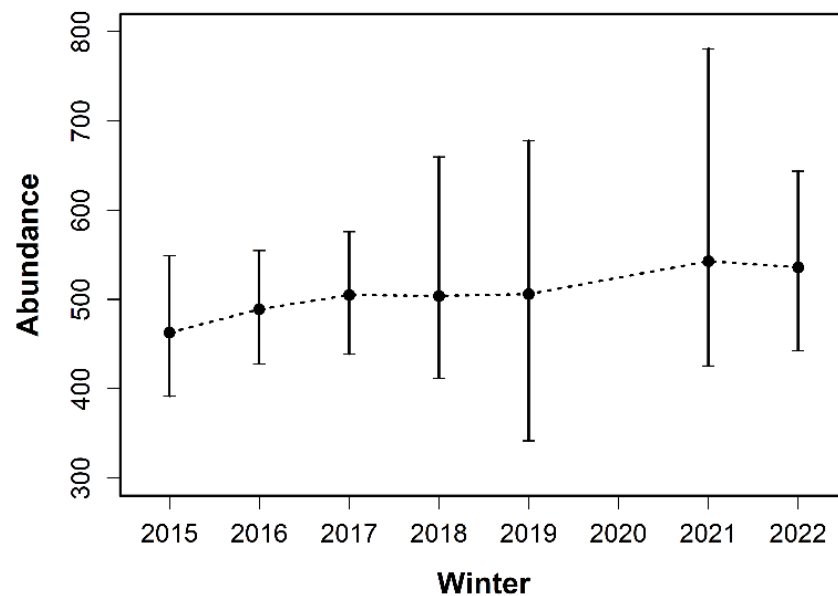


Figure 2. Time-series of whooping crane abundance estimates and 95% confidence intervals for the Aransas-Wood Buffalo population beginning in winter 2015–2016.

Table 1. Preliminary whooping crane abundance estimates for the Aransas-Wood Buffalo population on their wintering grounds, winter 2015–2016 through winter 2022–2023.

Survey year ^a	Survey month	Aircraft	Abundance ^b	CV	95% LCL	95% UCL	No. assumed beyond primary survey area ^c
winter 2015–2016	March	Kodiak	463	0.095	392	549	8
winter 2016–2017	March	Kodiak	489	0.116	428	555	6
winter 2017–2018	February	Kodiak	505	0.069	439	576	21
winter 2018–2019	February	Kodiak	504	0.122	412	660	12
winter 2019–2020	January	Kodiak	506	0.168	342	678	29
winter 2021–2022	January	Kodiak	543	0.182	426	781	38
winter 2022–2023	January	Kodiak	536	0.146	443	644	14

^a Due to the COVID-19 pandemic, surveys were not conducted during winter 2020–2021.

^b Estimated whooping crane abundance in the primary sampling area using aerial surveys and hierarchical distance sampling. CV = coefficient of variation, LCL = lower confidence limit, and UCL = upper confidence limit.

^c Provides our best understanding of the number of whooping cranes, at the time of the aerial surveys, that were outside of the primary survey areas. This information was based on data from Texas Whooper Watch, eBird reports, iNaturalist reports, the whooping crane GPS tracking study, and aerial surveys conducted in the secondary survey areas.

The survey protocol contains guidelines for promoting secondary survey areas into the primary survey areas. During winter 2021–2022, we observed enough whooping crane groups in the Heron Flats and the South San Jose Island survey areas to promote them into the primary survey area. These two areas were included as part of the primary survey area in winter 2022–2023.

Table 2. Whooping cranes documented outside of the primary survey area during January 23–28, 2023.

General area ^a	Data source	Adults	Juveniles	Total	Notes
Wharton and Colorado counties, Texas	GPS tracking study iNaturalist International Crane Foundation	10	1	11	Several groups using agricultural areas throughout winter.
Lubbock County, Texas	International Crane Foundation eBird iNaturalist	1	0	1	Single adult overwintering with sandhill cranes in agricultural areas.
Powderhorn Lake (secondary survey area)	GPS tracking study	1	1	2	Family group was tracked during the period of the aerial survey.

^a None of the secondary survey areas were flown during winter 2022–2023.

The data and results presented in this report are preliminary and subject to revision. This information is distributed solely for the purpose of providing the most recent information from aerial surveys. This information does not represent and should not be construed to represent any U.S. Fish and Wildlife Service determination or policy.

Matthew J. Butler, U.S. Fish and Wildlife Service, National Wildlife Refuge System, Division of Biological Services, P.O. Box 1306, Albuquerque, NM 87103, USA.

Colt R. Sanspree, U.S. Fish and Wildlife Service, Aransas National Wildlife Refuge, 1 Wildlife Circle, Austwell, TX 77950, USA.

Allison A. Griffin, U.S. Fish and Wildlife Service, Aransas National Wildlife Refuge, 1 Wildlife Circle, Austwell, TX 77950, USA.

Jena A. Moon, U.S. Fish and Wildlife Service, 1035 W Buccaneer Drive, Winnie, TX 77665, USA.